

WHAT IS CLAIMED IS:

1. A lamp device for a vehicle comprising:
a light source;
a reflector in which a reflection surface is a free
5 curved surface;

a lens having no prism; and
a reflected light by said reflector transmitting
through said lens so as to be irradiated to an external
section in accordance with a target light distribution
10 pattern,

wherein said lens is formed in a recess shape in a
vertical cross section and a horizontal cross section.

2. The lamp device for a vehicle according to claim 1,
15 wherein the reflection surface of said reflector is
structured such that the vertical cross section and the
horizontal cross section are formed in a substantially oval
surface larger than said lens.

20 3. The lamp device for a vehicle according to claim 1,
wherein a free curved surface formed on the reflection
surface of said reflector is a non-uniform rational B-spline
surface (NURBS).

4. The lamp device for a vehicle according to claim 2, wherein a free curved surface formed on the reflection surface of said reflector is a non-uniform rational B-spline surface (NURBS).

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5. The lamp device for a vehicle according to claim 1, wherein a torus curved surface or a free curved surface is formed on a front surface or/and a back surface of said lens.

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6. The lamp device for a vehicle according to claim 2, wherein a torus curved surface or a free curved surface is formed on a front surface or/and a back surface of said lens.

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7. The lamp device for a vehicle according to claim 3, wherein a torus curved surface or a free curved surface is formed on a front surface or/and a back surface of said lens.

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8. The lamp device for a vehicle according to claim 4, wherein a torus curved surface or a free curved surface is formed on a front surface or/and a back surface of said lens.

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